|  |  |  |  |
| --- | --- | --- | --- |
| PGRR Number | [098](http://www.ercot.com/mktrules/issues/pgrr098) | PGRR Title | Consideration of Load Shed in Transmission Planning Criteria |
| Date Posted | | November 8, 2021 | |
|  | |  | |
| Requested Resolution | | Normal | |
| Planning Guide Sections Requiring Revision | | 4.1.1.1, Planning Assumptions  4.1.1.7, Maintenance Outage Reliability Criteria (new) | |
| Related Documents Requiring Revision/Related Revision Requests | | None | |
| Revision Description | | This Planning Guide Revision Request (PGRR) adds language to the existing reliability performance criteria that allows a corrective action plan to be developed under certain outage scenarios. | |
| Reason for Revision | | Addresses current operational issues.  Meets Strategic goals (tied to the [ERCOT Strategic Plan](http://www.ercot.com/content/wcm/lists/144926/ERCOT_Strategic_Plan_2019-2023.pdf) or directed by the ERCOT Board).  Market efficiencies or enhancements  Administrative  Regulatory requirements  Other: (explain)  *(please select all that apply)* | |
| Business Case | | The North American Electric Reliability Corporation (NERC) Reliability Standard TPL-001-4 defines a P6 planning event as the concurrent loss of two transmission circuits, transformers, or shunt devices (following Manual System Adjustments after the first contingency loss).  In practice, a P6 planning event usually occurs when a construction or maintenance outage is followed by a contingency event. TPL-001-4 permits non-consequential Load loss as a mitigation plan for criteria violations following P6 planning events, but it does not limit the amount of Load loss. Although non-consequential Load loss may be technically acceptable, it is not desirable from a reliability perspective, particularly during off-peak periods.  Due to the summer outage restrictions implemented by ERCOT, the window to perform necessary maintenance and capital project work has been reduced. This has affected the ability of Transmission Service Providers (TSPs) to schedule outages.  This PGRR adds criteria that permits TSPs to develop corrective action plans so that they can schedule outages during off-peak periods without putting load at risk. This new language will improve system resiliency and give system operators the flexibility necessary to schedule outages for maintenance and capital project work.  Language in this PGRR is consistent with the expectations outlined in the TPL-001-5 R.2.1.4 and R.2.4.4 as the NERC Standards relate to the study of known outages in transmission planning assessments.  The NERC P6 planning event definition includes the loss of two single transmission elements, but in the ERCOT system, a contingency event also includes the loss of a double-circuit transmission line. This inconsistency between ERCOT and NERC planning criteria is addressed by this PGRR.  Past PGRRs have also supplemented NERC TPL-001-4 performance criteria. For example, PGRR025, Addition of Criteria for Autotransformer Unavailability, added the requirement for a transformer unavailability study, and PGRR060, Clarification of Reliability Performance Criteria, added the requirement for a DC Tie unavailability study. | |

|  |  |
| --- | --- |
| Sponsor | |
| Name | Sandeep Borkar |
| E-mail Address | [Sandeep.borkar@lcra.org](mailto:Sandeep.borkar@lcra.org) |
| Company | LCRA |
| Phone Number | 512-730-5173 |
| Cell Number | 501-246-0147 |
| Market Segment | Cooperative |

|  |  |
| --- | --- |
| **Market Rules Staff Contact** | |
| **Name** | Phillip Bracy |
| **E-Mail Address** | [Phillip.Bracy@ercot.com](mailto:Phillip.Bracy@ercot.com) |
| **Phone Number** | 512-248-6917 |

|  |
| --- |
| Proposed Guide Language Revision |

4.1.1.1 Planning Assumptions

(1) A contingency loss of an element includes the loss of an element with or without a single line-to-ground or three-phase fault.

(2) A common tower outage is the contingency loss of a double-circuit transmission line consisting of two circuits sharing a tower for 0.5 miles or greater.

(3) Unavailability of a single generating unit includes an entire Combined Cycle Train, if no part of the train can operate with one of the units Off-Line as provided in the Resource Registration data.

(4) The contingency loss of a single generating unit shall include the loss of an entire Combined Cycle Train, if that is the expected consequence.

(5) The following assumptions may be applied to the SSWG base cases for use in planning studies:

(a) Reasonable variations of Load forecast;

(b) Reasonable variations of generation commitment and dispatch applicable to transmission planning analyses on a case-by-case basis may include, but are not limited to, the following methods:

(i) Production cost model simulation, security constrained optimal power flow, or similar modeling tools that analyze the ERCOT System using hourly generation dispatch assumptions;

(ii) Modeling of high levels of intermittent generation conditions; or

(iii) Modeling of low levels of or no intermittent generation conditions.

(6) Assumed Direct Current Tie (DC Tie) imports and exports will be curtailed as necessary to meet reliability criteria in planning studies.

(7) Manual System Adjustments shall not increase the amount of consequential Load loss following a common tower outage, or the contingency loss of a single generating unit, transmission circuit, transformer, shunt device, FACTS device, or DC Tie Resource or DC Tie Load, with or without a single line-to-ground fault.

4.1.1.7 Maintenance Outage Reliability Criteria

(1) In an off-peak system condition, with any common tower outage, transmission circuit, transformer, shunt device, or FACTS device unavailable, followed by Manual System Adjustments, followed by a common tower outage, or the contingency loss of a single generating unit, transmission circuit, transformer, shunt device, FACTS device, or DC Tie Resource or DC Tie Load, with or without a single line-to-ground fault, all Facilities shall be within their applicable Ratings, the ERCOT System shall remain stable with no cascading or uncontrolled Islanding, and there shall be no non-consequential Load loss. An operational solution may be planned on a permanent basis to resolve a performance deficiency under this condition.

(2) An off-peak system condition occurs outside of the Peak Load Season.

(3) The initial assessments, including proposed solutions, associated with criteria in paragraph (1) above, shall be completed no later than December 31, 2023.